Region 1 FY 2013 Invasive Species Control Program Proposal

Refuge/complex name: McNary NWR and Toppenish NWR, Mid-Columbia River NWR Complex

Project title: Eradication of Yellow-flag Iris

Total amount requested: $12,500

Project description:

Target Invasive Species: Yellow-flag iris (*Iris pseudacorus*)
Infested Acres: approx. 7 acres in small, isolated patches within ~2,080 acres on both refuges
Treatment Acres: approx. 7 acres

Yellow-flag iris is an escaped ornamental rhizomatous perennial herb that forms dense vegetative mats in riparian and wetland areas. These mats can displace most native vegetation in infestation areas, significantly degrading native habitats and altering stream and shoreline hydrology, negatively impacting habitat quality for numerous species of migratory waterfowl, secretive waterbirds, migratory songbirds and native salmonids. Yellow-flag iris is a Class "C" noxious weed in Washington State, and "B" designated in Oregon.

Yellow-flag iris was first noticed on McNary NWR in ~2009 in two small (<10') patches in a moist soil management unit. By 2011 it had shown up in 4 other disparate areas in two other management units and now covers ~2 acres of riparian habitats within ~80 acres. The original source of the infestation is unknown, but is believed to have originated from seed. No other significant infestations are known to be nearby upstream of the refuge on any of the three rivers crossing the refuge. Yellow-flag iris was first noticed on Toppenish NWR in ~2010. In 2012, numerous small patches were seen in many of the marsh units of the refuge, covering ~5 acres within ~2,000 acres of impoundments. No infestation source is known to be upstream of the refuge. It is believed to have been brought in by wildlife during flooding events in 2009 and 2010 from infestations downstream of the refuge (in the Yakima River drainage) and/or from ornamental plantings.

The proposed project will eradicate yellow-flag iris from both McNary and Toppenish refuges. Known infestations will be targeted for chemical application (aquatic-labeled glyphosate @ 5-8% solution, with aquatic-labeled surfactant/penetrant) and/or manual removal where necessary (e.g., small, isolated infestations or individual plants growing with sensitive native vegetation). The remaining susceptible areas of the Refuges will be systematically inspected for additional occurrences, and any found plants will be treated and/or removed. In the Columbia Basin, yellow-flag iris will often flower in its first year of growth, and the conspicuous flowers make new infestations relatively easy to spot as no other riparian vegetation occurring on the refuges is even remotely similar in appearance.

Distinct project with well-defined objectives (10 points):
Yellow-flag iris is a relatively new invasive species for the Complex as a whole and as such has not been actively controlled as part of annual control activities. Invasive species control needs within the Complex are already beyond what the base budget can cover. Systematic inspection and targeted treatment of a new species is not possible without abandoning other target areas, due to chemical and salary costs, unless additional funding can be found.

Potential for maximum control (10 points):
It is anticipated that yellow-flag iris can be eradicated from both refuges with one to two years of effort, depending on the seed bank and germination. However, without specifically knowing the origin of the current infestations it is impossible to define the potential longevity of eradication/control on either

refuge. Given that no large infestations are known upstream of either refuge, and that yellow-flag iris is a species specifically targeted by county weed control boards and irrigation districts (i.e., infestations outside of the refuges are being treated as encountered), the likelihood of extended control is high. The proposed control methods (chemical treatment and manual removal) are known to be highly effective against iris as long as the entire plant is treated and no plant parts are left during removal.

Biological benefit to priority species or BIDEH (10 points):
Left unchecked, yellow-flag iris forms dense mats of vegetation, outcompeting most native plants and significantly altering in-stream and shoreline hydrology. This includes cover and forage habitats of numerous species of migratory waterfowl, including ducks, geese, and swans, and waterbirds, such as pelicans; cover, forage, and breeding habitats of secretive waterbirds, including rails and bitterns; cover, forage, and breeding habitats of migratory songbirds, including blackbirds, wrens, and sparrows; and cover and forage habitats of numerous salmonids, including steelhead (*Oncorhynchus mykiss*). All of these are trust species.

Utilizes the principles of Integrated Pest Management (5 points):
Our proposed strategy uses chemical and mechanical treatment strategies, as well as early detection/rapid response. These strategies have been shown to be highly effective on infestations such as those on McNary and Toppenish NWRs. All known infestations on both Refuges occur in, or on the margins of, stands of native vegetation. As such, additional habitat restoration should not be necessary (i.e., it is anticipated that the native species will readily reoccupy the infested grounds before something less desirable can fill the gap).

Monitoring to document and evaluate project success (5 points):
Monitoring will be accomplished through direct observation of treated infestations. Infestations will be GPS'ed at treatment using hand-held Trimble® units and a customized data dictionary in TerraSync®. These GPS files will be imported into the Complex's GIS for long-term documentation and monitoring. Treated sites will be revisited in subsequent years and retreatments will be made as needed.

Involves matching funds (*not required*) or in-kind support from partners (5 points):
County weed control boards (Walla Walla, Umatilla, Benton, and Yakima), irrigation districts, and several private landowners up- and downstream of both refuges are controlling yellow-flag iris infestations as they are encountered. While no matching funds are being offered to USFWS for control of iris on our lands, we do have the support (and interest) of these groups. The Complex's Invasives Strike Team will carry out the proposed treatments of yellow-flag iris. The Team is primarily funded by a grant from NFWF.

Budget: $9,150

Personnel: $10,000
Equipment/Travel: $2,000
Materials: $500

The Complex will be forming an Invasives Strike Team for 2013 to target other projects on the Complex. The requested personnel funds will allow for the extension of this strike team earlier in the year than is allowed for in the current base funding (yellow-flag iris is treated earlier in the season than the strike team is budgeted to begin). These funds will also help to cover the development of necessary NPDES permits. The equipment and travel expenses will cover fuel and vehicle costs to travel to the infested refuges and sites. The strike team is to be based out of the Burbank office. Toppenish is approx. 160 miles round-trip from Burbank. The McNary infestation sites are approx. 40 miles round-trip from the Burbank office.

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